THE SOUTHERN PLANTER,

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

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P. D. BERNARD,

PUBLISHER AND PROPRIETOR.

C. T. BOTTS,

EDITOR.

☞ All Communications, concerning the Planter, must be addressed

P. D. BERNARD, *Richmond, Va.*

☞ For Terms see last page.

WHEAT.

This great and important crop now occupies the attention of all those whose lands and situation lead them to cultivate it. We need not say that the best soils for it are the strong, well-prepared clay and heavy loams. But the very best wheat may be also obtained from many light, and from all marly and calcareous soils. Indeed lime, in the land, in any form, is the great thing for wheat. The great amount of silicia in the straw of such grains as wheat, rye, oats, &c., (it is about four-fifths of the whole ashes when burnt,) requires an ample provision for it in the soil, in a form susceptible of a ready assimilation by the plant. This is afforded by the action of lime upon the soil. It is also afforded by ashes. Lime is also advantageous to wheat by checking an exuberant growth of the weak loose straw, with which the rust makes its appearance. On the contrary, fresh barn yard manure on wheat land, not only sows a quantity of foreign seed among the wheat, but it induces this rapid growth of weak straw; and thus causes the rust. There is the same objection to lands rich with decaying vegetable matter. But wheat may be successfully obtained from this last mentioned soil, and also from land enriched with fresh manure, if prepared with lime also, which will prevent the evil mentioned. A dressing of charcoal, it is said, is also an effectual preventive, and it is now extensively used in France for the wheat crop.

There is another indispensable to a large wheat crop besides good soil, and that is depth of soil. If the reader will take the trouble to examine the roots of his wheat, he will find that there are two sets of them; one of which pushes along the surface of the ground, and the other extends deep into the earth, penetrating downwards. Thus this grain extracts its nourishment from every part of the soil, and to produce it in abundance, the soil must not only be good, but deeply ploughed. It should be thoroughly turned up with the plough, and underdrained; for wheat on clay lands is almost certain to be winter-killed, unless the lands be well drained. By successive freezings and thawings, the roots are broken and thrown out. But when the ground is ploughed deeply and thoroughly, the water on the surface has an opportunity for percolation to a depth which renders the wheat in a measure safe from it. An intelligent cotemporary remarks. "In grounds not naturally wet, we believe that this evil would be remedied by subsoil ploughing. We mean the passing of a subsoil plough in the furrow of the share-plough, at the time of the latter operation, so as to pulverize some six or eight inches below the depth of the furrow slice, and *not* to turn up, or invert the subsoil. There are ploughs to be had of most of the manufacturers, expressly made for such a purpose. The practice of subsoiling does not much obtain in our country, but has never been tried but with the best effects, resulting invariably in the improvement of the quality, and the inc grain. In England it has obtained g larity, and it is said, together with have added one-third to the realm. It gives, in fact, two

the plants to pasture on, for every one surface of culture. It protects them alike from the ills of extreme drought, and excessive wet. It unfolds new mineral resources to the roots of the plants, while the ease with which their descent is made, encourages a vigorous growth, and thus defends them from the uprooting influences of the freezings and thawings of winter."

It is always best, in our opinion, to harrow the land ploughed from day to day, as it is then easiest reduced to a fine tilth.

In selection of seed, the heaviest and plumpest is of course the best; and many people find out which is the heaviest by *casting*, or throwing the grain some distance on the floor, and only using that which falls farthest. This is certainly a summary method, but it is probably attended with no further advantage than the separation of the wheat from the lighter seed of chess or weeds. In some way the wheat should be carefully cleansed from every other seed, and if this method does not cleanse it, the seive should be resorted to. Washing in strong brine will cleanse it of most things; as the lighter substances will float on the surface; and may be then picked off. If the wheat is smutty, it should be again washed in another brine, with a little quick lime mixed with it; or in the brines mentioned in the following recipe, which we get from the American Farmer. The smut may always be prevented by a little care at the time of sowing:

1st. Prepare a ley of wood ashes.

2d. A brine of salt and water.

3d. A ley of lime.

Each strong enough to bear an egg or potato. Graduate these steeps to the quantity of wheat you may wish to soak. Having prepared them, take as much wheat as you wish to sow from day to day, wash it well in pure water from the pump, until it no longer discolors the water. Then put it into the steep, stir it well and skim off the light grains that float ...e top. These light grains may be given ...ogs. Let the seed remain the over ...e steep. Next morning when you ...ow, drain off the water and dry ...ked lime, unslacked ashes, or plaster. As soon as this is done, begin to sow, taking care not to dry more seed any one day than you can sow that day. No harm is done to the seed while in soak, for many days, but its germinating powers, if left for only a few days, after being taken out and dried, would be destroyed. Seed wheat, when thus prepared, is not only secured against smut, but receives in the process an impetus which urges forth vegetation several days in advance of that which may be sown without being soaked, and grows and roots much quicker.

BURNING WELLS OF KANAWHA.

We take the following curious and interesting account of the burning wells of Kanawha from the columns of "The Farmer and Mechanic:"

The Salt Wells of Kanawha, some of which are sunk to the depth of 2,000 feet in the earth, discharge an immense quantity of carburetted hydrogen gas with the salt water. The force of the ascending volume is very great and rises to the height of 100 feet above the surface of the earth. A lighted torch applied to the ascending column instantly ignites the gas—it burns with great brilliancy. The water which rises from the deepest well is intensely cold, as is also the gas. The workmen become chilled in a few minutes when employed about the well. The laborers in warm weather fill earthen jugs with rain water, and then immerse the jug in the vats in which the water from the wells is collected, and thus refrigerate the river water, making it as cold as iced water.

The force of the ascending column of water and gas in a well recently sunk to the depth of 300 feet was so great when first struck by the auger, that the auger and wooden poles attached, were all blown out of the shaft and thrown into the river, 200 feet distant, to the great terror and confusion of the workmen. My friend, Thomas Spencer, Esq., former Superintendent of the New York State Salines, of Onondaga, has recently visited the Kanawha Salines, on his return from Fossil Salt Mines, in the Southwestern Mountains of Virginia, and has given me

a minute account of the Burning Wells and of the geological features of their immediate neighborhood. Mr. Spencer has brought me a number of pieces of incrustation of the inner surface of the tubes through which the gas and salt water ascends from its deep subterranean fountains. Some time since the deepest well at Kanawha was supposed to have exhausted the great subterranean gasometer, as the gas and salt water ceased to rise, but the probability is, the shafts have been closed by the rapid crystalization of the material which forms this incrustation on the inner surface of the tubes, and the further discharge of the water and gas thus prevented. I have not analyzed this substance, but its appearance leads me to conclude that it is sulphate of lime. The roaring well of Lockpit, which is 401 feet deep, was affected in the same way; the pump placed in that well became so choked with *selenite*, that it was difficult to work it. The crystalization there was different, being that of flattened prisms with eight sides—half to three-fourths of an inch in length, and one-sixteenth of an inch in thickness, and one-eighth of an inch in breadth—perfectly transparent, but on being calcined became opaque and of a shining white, and discovering the formation to be laminated, the *laminæ* being thinner than the thinnest gold leaf.

The gas which rises in the Kanawha wells is used as fuel for evaporating salt water, and crystalizing the salt—the inner surface of the furnaces in which the gas is burnt becomes extensively incrusted with a porous substance of a dark blue or black color, hard, like pumice stone, hanging in clusters like vegetable productions; a sample which Mr. Spencer brought me resembles the fern plant, both in leaves and stem. About two millions of bushels of salt are made at these salines annually. I have samples of three parcels—alum salt, steam boiler salt, and the common pan salt. This salt has a slight reddish tinge—the alum salt has much more transparency than the Onondaga solar salt or the Turk's Island salt. The salt is sold at the Salines at twenty-five cents per bushel of fifty pounds. The fuel used for salt making is gas and bituminous coal. Bituminous coal is very abundant in the immediate neighborhood, and costs but a little. I have a sample of this coal, and also a sample of bituminous coal from the Pittsburg mines. The Kanawha coal is of less specific gravity than the Pittsburg. A mine of cannel coal has recently been discovered 16 miles from the Kanawha Salines. I have also a sample of this coal—it is superior to any cannel coal that I have seen, and I have several specimens of foreign cannel coal, such as is brought to the New York market. This last is so close in its texture, and so hard, that it could be wrought into snuff boxes. When the old wells were first made at the Kanawha Salines, to the depth of three or four hundred feet, a large quantity of petrolum came up with the water—this substance is known by the name of "Seneca Oil," "Barbadoes Tar," and the transparent oil is "Naptha." I have a specimen of it which is very limpid. The salt water at Kanawha requires much purification previous to crystalization, passing through four several vats or receivers. Much bitter water, as it is termed, is extracted, and this is of great specific gravity. I have a sample of this bitter water of the specific gravity of 1 964-1000—it is very acrid and pungent. Cattle that tread on the ground saturated with it lose their hoofs. The Kanawha Salines are upon the Great Kanawha river, in the southwestern part of Virginia, east of the Ohio river and west of the Alleghany mountains.

Fears have been expressed by many of the residents of Kanawha, that the gas in the wells would be ignited by lightning storms, and an explosion result from the combustion of the gas in this great subterranean gasometer. There is no danger of this whatever. The gas is covered by water, and should the lightning come in contact with the gas, it would ignite the gas and then mingle with and burn silently until extinguished. Such was the operation of the lightning and the gas in the gas pipes in Pearl street, in New York, when a store was struck by lightning and the gas pipe melted and the gas set on fire.

Should balloons ever come into exten-

sive use, Kanawha gas wells could furnish these ærial vessels with an abundance of inflammable air, and a sufficiency for all the ballooning which the world may ever require.

The coldness of the water in the deep wells at Kanawha, which are deeper than the far-famed artesian well of Grenoble, Paris, contradicts the theory that the earth increases in temperature as progress is made downward. The New York Municipal Gazette contains extensive and detailed accounts of the Kanawha Salines. These Salines may be reckoned among the greatest wonders of the great West.

The inhabitants of Kanawha county, who are numerous, live upon a crust of a vast gasometer of inflammable air, and should that section of our continent become, like some districts of South America, destitute *of water*, then the gas would become explosive, but even in such a case it is probable that the absence of water would diminish the gas, and that the great gasometer would become an empty cavern.

The condensation of this gas has furnished the petrolum found in the earth, and the crystalization of the petrolum has produced the bituminous coal found in the mines—and thus nature is constantly laboring in the great changes which are continually going forward—the etherial changing to the material, and the material again becoming etherial, and thus will continue to labor until the great globe itself "shall melt with fervent heat," expand its atmosphere, change its orbit for one of greater eccentricity, take a comet's path, perform a comet's revolutions until it shall again acquire density, and then return again to its place in the great system of worlds, "*a new earth*," a new creation.

E. MERIAM.

ELECTRO-CULTURE.

Much was said a year or two since, and high expectations raised, relative to accelerating the growth of vegetables by electricity. Plats of ground were encircled by wires buried beneath the surface of the soil, and connected with upright pointed conductors, for stimulating the growing plants, the operator forgetting that the moist soil, being a free conductor of electricity, dissipated in a moment every particle of the fluid that came down the rods, and not reaching the plants, and also forgetting that if the soil were not a conductor, the electricity thus brought down could never reach them; two conflicting absurdities thus lying at the very threshold. Extraordinary expectations were also raised by the occasional observance of the great luxuriance of some plants at the foot of lightning rods—resulting from growing in the deep bed of mellow soil made by digging the hole for the lower end of the rod.

Accurate scientific experiments have been lately made under the supervision of Professor Solly, of the London Horticultural Society, which set the matter finally at rest. A large and powerful cylinder electric machine was used, and the plants, in pots, within doors, were kept heavily charged, four hours each day, for four weeks; and although the experiment was varied in many different ways, not the slightest influence could in any case be perceived, either favorable or detrimental to vegetable growth. The plants operated upon, several pots of each sort being taken, were young French beans; young plants of the common scarlet geranium; plants of the strawberry; seeds of wheat, and seeds of mustard and cress. Experiments were afterwards made in the open air, on a number of different plants, and the machine worked four hours each day for nearly six weeks, but not the slightest difference could be observed between those electrified and those not.

THE BEE.

The sting of the humble bee is not only severe, but he can sting many times in succession, as he does not lose his sting in the operation. The honey bee, on the contrary, buries his sting deep in the flesh of a person or animal, and as he tears himself away, he leaves the extremity of his body, and tears out a part of his en-

trails; and though he may return to the hive, he is soon killed by his fellows, as useless, or he soon dies. If a person uses leather gloves, or mittens, in managing bees, when there is danger of their stinging, they lose their lives if they sting in the leather. We once counted fifty stings in a pair of leather gloves, after going among bees that were enraged. So many lives were lost, which induced us afterwards to use very thick, fringed woollen mittens, and when the bees stung these, they could withdraw their stings without injury, as there was not enough firmness in the material to hold the sting, which has beard or barbs, like those of a fish hook, that prevent their easy extraction.

Boston Cultivator.

POTATO ROT.

We see in one of our exchanges the statement that William Shull, of Springfield, Ohio, thinks he has been successful in raising a crop of healthy potatoes last season from diseased seed, by cutting the seed potatoes small and placing them in running water for three days before planting. We place little confidence in this idea, as we think the disease is a gangrene of the cellular tissue of the potato itself. Mr. Shull says: "The object of putting them in the running water, is to carry off the disease, which, as it soaks out, will cause the potato to become white and clean, with a healthy appearance. They should be planted so soon as taken out of the water. I have only to add that from the seed thus treated, I have good potatoes, which are entirely free from disease, and which have kept sonnd, while all others in the country are rotting." If these potatoes had really have had the disease, we hardly think any washing would have got it out. There is probably some mistake.

It will not do to hoe a great field for a little crop, or to mow twenty acres for five loads of hay. Enrich the land and it will pay you for it. Better farm thirty acres well, than fifty by halves. You will gain by it.

From the Iowa Advocate.

CULTURE OF FLOWERS.

Flowers should be cultivated in every garden, especially if near the house; in which case, if not in every other, the garden certainly ought not to be limited to the production of vegetables merely, but should contain the ornamental as well as the useful. Too much time and space must not, however, be devoted to flowers, and we will only mention a few of the more hardy sorts, which may be easily managed, and which will be pleasing at all seasons of the year.

Climbing over the porch, or around the door, you may have a few of the hardy, tall-growing roses, for ornament. Common monthly or China roses, may cover the corners of your house, or be trained under and along the sides of the windows, mixed with laurestinas and pyracantha, nor let the honeysuckle be wanting, but in some corner, twisted around a tree, or hanging over a corner of the wall.

Have plants of the hundred-leaved, moss, cabbage, variegated and common blush roses, in the corners of your garden nearest your house, and in the borders, plant snow-drops, crocuses, red and yellow tulips, white and yellow bachelors' buttons, primroses, anemones, narcissus, cowslips, polyanthus, white and yellow lilies, wall-flowers of different colors, dahlias, hollyhocks, jonquils, violets, the sweet-scented clover, mignionette, and any other annuals you like or can procure.

If you edge your flower-border with the garden daisy, and the hardy sorts of auriculas, there will be few days in summer or autumn in which some pretty little flower will not peep forth, and afford you pleasure in looking at it. A holly, (an American one North, or an European, South,) box, laurel, or rhododendron, will do well under shade, and their perpetual green will refresh your eyes in winter; and be assured that such objects as a garden present, if it be neatly kept, are always valuable, for they do the heart good, and impart a kindly tone of feeling and refreshment, and serve to keep out evil thoughts.

Encourage your children in a taste for flowers. Teach them to plant the seeds and roots, and to weed and keep them clean, and train and cultivate them, and the taste will remain with them when they grow old. It is on such things as these, in the recollection of by-gone days, that local attachment is founded, making us delight to revisit the scenes of our childhood, bringing back the wanderer from distant climes, to seek a last resting place in the home of his fathers.

RECIPE FOR POUDRETTE.

Take 40 bushels of mould from the woods,

Five bushels of ashes, leached or unleached,

Five bushels of bone dust,

One bushel of plaster.

Incorporate the whole well together, by shovelling it over until the mass is thoroughly mixed. Then moisten the heap gradually with 30 gallons of human urine; shovel the whole over until the entire compost is saturated with the urine, then throw the whole into a conic pile, and let it remain for a week or two, when it may be spread over an acre sowed in wheat, as soon as that shall have been ploughed in; to be finished by harrowing.

We have no doubt that the above compost, or if you please to call it poudrette, would increase the product of wheat a hundred per cent. upon lands usually appropriated to wheat culture—nor do we doubt that it would so far improve the soil as to answer, without any other manure, through a four years' course of rotation.

Somewhat similar to this is the following method for making a compost of great power, and which is still more simple than the above. Have two or three barrels about three-fourths full of ashes, placed in some convenient spot near the farm-house or barn, and cause all the chamber-ley to be daily emptied upon them. In a few days the ashes will be perfectly saturated. Empty them in a pile, cover it with earth, and refill the barrel with ashes. By these means, in a few weeks, from materials that are generally lost about every establishment, a large quantity of manure may be collected, of a most singular efficacy. Having witnessed the results produced by a very thin sprinkling of it, we can testify to its worth.

From the Ohio Cultivator.

SUBSOIL PLOUGHING—BOTTOM LANDS.

Is it a fact, Mr. Editor, as I heard stated at Columbus, that subsoil ploughing does no manner of good, to our alluvial bottom lands? If so, it should be generally known, and the sooner the better. Several of my neighbors contemplate purchasing subsoil ploughs for that description of lands. I may have committed an error in recommending the practice. I never used the subsoil plough, but from the results of very deep ploughing, experiments and observations, I had come to the conclusion that it would be beneficial on almost every description of soils, provided the land is not too we .

It is very evident that the pressure of the plough, running at a uniform depth for many years, forms a hard stratum almost impervious to water, and impenetrable to the roots of plants. When breaking a clover ley, a short time since, the ground wet and loamy, with water standing on numerous portions, shortly after heavy, protracted rains, I found the earth quite hard and dry at the depth of seven to nine inches, or just below where the plough usually ran.

A neighbor, who pays but little attention to agricultural science, on renting a farm adjoining me, complained that the ground was so hard, at a depth of four or five inches, that he could not plough below that depth, without going entirely beneath that hard stratum, the former being too shallow, and the latter too hard on his team. I explained the difficulty; the original proprietor had skinned about three or four inches deep for some twenty-five years, forming a complete hard-pan.

Mr. J. Buffington, an extensive farmer and quite an observing man, tells me

that when using the bull-tongue for a make-shift subsoil plough, he had to put a heavy weight on the plough to make it penetrate the hard stratum below the furrow of the large plough. His land, as you know, is an alluvial deposit, abounding in vegetable matter, rich loam and sand—one of the deepest and richest alluvion soils on the Ohio river. The result of his experiment with the bull-tongue was favorable, giving a better yield than the balance of the field, where the large plough only was used.

When preparing a piece of pond land for a premium crop of corn, a few years ago, I had occasion to fill up a temporary ditch that had been made the year previous, and it so happened that a row of corn was planted directly over the ditch, which gave it a decided advantage over any other row in the field, the entire product being at the rate of seventy-one bushels per acre, soil eighteen inches deep, rich muck, or vegetable deposit, clay subsoil.

The Rev. James Kelley, of this county, when digging a well, hauled sand from near the bottom, and filled up an old well that had been partially dug in his field by the original proprietor, after which he ploughed the field and planted corn. The hills of corn planted in the pure sand, or nearly so, and directly over the old well, gave an extraordinary yield, producing ears twenty-two inches in length, at least six inches longer than I ever saw, and four longer than I ever heard or read of.—Query: Was this extraordinary result caused by some mineral or other nutritive qualities contained in the sand that came from many feet below the surface; or was it the action of the rains and atmosphere, dissolving and rendering the sand soluble, that it could be readily taken up by plants, or did the unusual depth of loose earth induce the roots of the corn to extend down to such a depth as to afford a constant and uniform supply of food and moisture, even temperature, and a great variety of dainties to feast upon?

Do not these results, after making a liberal allowance for the fact that similar causes produce different effects under different circumstances, indicate that subsoiling will be beneficial even to our bottom lands, Mr. Thomas to the contrary, notwithstanding? H. N. G.

Subsoiling is certainly a very good thing in many circumstances; where there is a deep soil, it is absolutely necessary to obtain the full strength of the ground. But where we have a thin crust of loam over a subsoil of intractable clay, we must not expect to receive much benefit from deep ploughing, unless the earth turned up be properly manured.

From the Cultivator.

PROPER CONSTRUCTION OF LIGHTNING RODS.

As the season is fast approaching in which large quantities of hay and grain are to be stored, I wish to call the attention of your numerous readers to the importance of protecting their barns by lightning rods.

It is well known that the warm vapor arising from newly filled barns, has a strong affinity for electricity, and on the near approach of a thunder cloud, places such buildings in imminent danger; but a prejudice has arisen against the use of conductors, from the improper manner in which they have generally been constructed. When not rightly made and put up, they are of no value. In many cases they may be even worse than useless. For instance, if the points at the upper extremity are covered with rust, they will not answer the purpose intended, because a metallic oxide *repels* instead of attracting electricity. If the lower end terminates before reaching the ground, or penetrates it but a short distance, the fluid is liable to escape from the rod into the side of the building, which being close at hand, offers a better conductor than the air, or the dry surface of the ground.

For the information of such as may not have given attention to this matter, I will give the method of making and attaching conductors, which has been tested by experiments, and approved by men of science.

They should be made of horse shoe rods, five-eighths inch square, which are sufficiently large, and being slit cold, have a rough, jagged surface, affording numerous radiating points. The several pieces of which the rod is composed may be welded smoothly together, so as not to increase the size, or joined by a hook and eye.

In the last method, the hook should have a point left on the end, and be driven into the eye after being bent at little more than a right angle.

In applying the conductor to barns, begin at the northwest corner, by inserting the rod far enough into the ground to always insure its contact with moist earth; carry it along the gable end to one end of the ridge pole, thence along the ridge pole to the other end of it, thence along the other gable end, and down the southeast corner, continuing it *into* the ground, as in the beginning, far enough to reach the *moist* earth. There should be a point at the eaves on each corner, and one on each end of the ridge pole, which should be covered with a coating of silver to prevent them from rusting. The rod should be secured in its place by wooden fastenings. If these directions are carefully observed, there can be but little doubt that buildings thus provided would be effectually secured against destruction by lightning, with little trouble and at a small expense. W.

TRENCHING.

Trenching is one of the readiest modes in the gardener's power for renovating his soil. The process is thus conducted:

"From the end of the piece of ground where it is intended to begin, take out a trench two spades deep and twenty inches wide, and wheel the earth to the opposite end, to fill up and finish the last ridge. Measure off the width of another trench, then stretch the line and mark it out with the spade. Proceed in this way until the whole of the ridges are outlined, after which, begin at one end, and fill up the bottom of the first trench with the surface or 'top spit' of the second, then take the bottom 'spit' of the latter, and throw it in such a way over the other as to form an elevated, sharp-pointed ridge. By this means, a portion of fresh soil is annually brought on the surface, to the place of that which the crop of the past season may have in some measure exhausted."

Bastard trenching is thus performed: "Open a trench two feet and a half or a yard wide, one full spit, and the shoveling deep, and wheel the soil from it to where it is intended to finish the piece; then put in the dung, and dig it in with the bottom spit in the trench; then fill up this trench with the top spit, &c., of the second, treating it in like manner, and so on. The advantages of this plan of working the soil are, that the good soil is retained at top—an important consideration where the subsoil is poor or bad—the bottom soil is enriched and enloosened for the penetration and nourishment of the roots; and allowing them to descend deeper, they are not so liable to suffer from drought in summer; strong soil is rendered capable of absorbing more moisture, and yet remains dryer at the surface by the water passing down more rapidly to the subsoil, and it insures a thorough shifting of the soil."

In all trenching, whether one, two or more spades deep, always previous to digging, put the top of each trench two or three inches deep, or more, with all weeds and other litter, at the bottom of the open one, which not only makes clean digging and increases the depth of loose soil, but all weeds and their seeds are regularly buried at such a depth that the weeds themselves will rot, and their seeds will not vegetate.

"BIG-HEAD" IN HORSES.

The disease in horses called "big-head" is sometimes very troublesome, both on account of the pain and injury it inflicts on the horse, and the difficulty of curing it. J. J. Rosseau, in the Prairie Farmer, gives an article descriptive of the disease and mode of cure. He says: "The first appearance of the big-head, when it attacks the upper jaw, is more like that

produced by the halter in breaking young horses, than anything I can compare it to. Indeed, so similar are the two, that jockeys frequently trade off horses having incipient big-head, stating that the appearances have been produced by a halter.—The horse first loses that delicacy of proportion about the head, which is one of his greatest ornaments, looking clumsy and awkward on account of the swelling which takes place first at or near the place where the nose-band of the halter passes round the nose. The tumors are at first small and circumscribed, and may not be noticed by a careless observer. Their situation is on each side of the face at the place above indicated, and when they acquire their greatest size, they extend to the eyes, or thereabout, and their elevation will be one or two inches, and in bad cases more. The head now presents a peculiarly clumsy appearance. Frequently before the upper part of the head advances so far as just described, the affection seizes the lower jaw bone, which becomes much larger than natural."

The shoulder, also, he says, is liable to be attacked. It begins to swell at the points, from which it extends and embraces the whole scapula. But the disorder observes no regularity in attack and progress. "Sometimes the face alone is affected; sometimes the lower jaw, and sometimes the head is last affected; the complaint beginning in the shoulder, and extending to the limbs, and finally to the head." In some cases, it is said the disorder does not extend to the head, and in such cases it is called the "stiff disorder," though the complaint is said to be the same, as is proved by its being cured with the same treatment. It appears to be known by the various names of "big-head," "big-jaw," "big-shoulder," and "stiff disorder," but the same treatment is recommended for all. The disease is divided into three stages. The first stage is known by stiffness in the limbs, lameness, &c. The second stage is shown by the enlargement of the head, jaw or shoulder. The third and last stage is shown by the protuberances on the head; having gained a considerable size and bony consistence. The treatment for the first and second stages is given as follows:

"1st. Apply a cord around the upper lip, put in a stitch and twist it so as to hold the horse still. This is a common operation, and familiar to every farmer. Then cut through the skin on the middle of the nose, vertically, and immediately on the rounding part between the nostrils. Let the incision be no deeper than to expose the tendon which passes down in this place. Lay hold of the tendon and cut it in two; then cut it off again at the distance of about one inch, taking the piece entirely out. (The piece must be taken out, or the cut extremities would soon reunite.) Next, double one ear and excise about an inch from each cord; so with the other ear."

After the operations have been performed, it is recommended to turn the horse to grass, to give him no grain, and neither ride nor drive him until he is well, which it is said will require several weeks, and it is recommended to give him on alternate days, a tea-spoonful of saltpetre, and a table-spoonful of sulphur, for nine or ten days; bleeding him every two or three days in the course of that time.

In case the disease has reached the third stage before treatment is commenced, it is directed to "bore a gimblet-hole in each protuberant bone of the face, (one on each side,) and introduce into them a piece of arsenic the size of a pea, wrapped in tissue paper."

CANADA THISTLES.

Some persons suppose that this plant is only propagated by root, not from seed. The idea is unquestionably erroneous, and leads to a carelessness which permits the increase of the pest. It is true that it spreads rapidly by roots; but where it is seen to spring up, as it frequently does, at a considerable distance from where it had previously grown, it may be known to have sprung from seed. It should therefore be made a rule to prevent its seeding in all cases.

In pastures and all grass grounds, this-

tles should be *mowed close to the ground* twice a year, just as they are in blossom, before any of them have seeded. The labor of cutting will in many cases be repaid by the extra quantity of feed which may be thus obtained. Thistles frequently occupy the best ground, and where they stand thickly, they prevent animals from eating the grass which grows among them. By cutting them closely, the grass springs fresh and sweet, and the patches are grazed so much that the growth of the thistles is often much checked. On moist land, which is inclined to make a thick sward, thistles may be effectually smothered down and killed by following up the practice of cutting for a few years. We have formerly proved this in our own experience in repeated instances.

In cultivated land, the Canada thistle may be destroyed by frequent ploughing Four thorough ploughings, with an interval of three weeks between each ploughing, will destroy the principal portion of them.—*Cultivator.*

USEFUL RECIPES FOR WRITERS.

"W." in the Maine Farmer, under the above head, gives the following useful information in regard to writing on oily paper, parchment, &c. It is sometimes the case that paper contains oleaginous matter which prevents the ink from spreading, and causes much trouble to those who attempt to write on it. When paper possesses this character, or when it is necessary to write on parchment, which is generally possessed of an oily or greasy surface, put a few drops of fresh, unadulterated beef's gall into the writing fluid, and you will find it to flow easily and freely from the pen. By adding a little salt and vinegar to the fluid, it may be preserved a year or more without corrupting.

"INDELIBLE INK.—This article is now extensively used for marking linen. The shopman's price is usually two shillings per bottle; but those who wish to use it can manufacture it much cheaper. To two drachms of nitrate of silver, add a weak solution of tincture of galls, (four drachms,) and mix them thoroughly by shaking. This is an indelible fluid, and withstands the effects, combined or separate, of heat and suds. Another recipe is nitrate of silver, one drachm; purest gum arabic, half an ounce, dissolved in half a pint of purest rain water, caught in a perfectly clean vessel, in the open air. To write legibly with this ink, the cloth must first be dipped in a solution of one ounce of salt of tarter, in an ounce and a half of water, and exposed to the sun until perfectly dry, before the ink is applied. Nitrate of silver may be made by putting siver into nitric acid, (aquafortis,) by which it is dissolved."

THE COCKROACH NUISANCE

Take a sixpenny loaf of wheat bread—the staler the better—reduce it to a crumb, (of course after paring off the crust,) then in a pint of boiling water put two tea-spoonsful of Cayenne pepper, one of pulverized orris seed, half a drachm of saltpetre, the same quantity of white lead, and a wine glass full of extract of hops. Now throw in your crumb of bread, digest for six hours in a moderate heat; strain through a cloth, add to the liquor 30 drops of tincture of quassia, and let it stand till the next day; then bottle it and keep it in a pantry. Some doxen lumps of sugar, saturated with the mixture, and strewed about the kitchen, will remove this pest in less than no time.

FATTENING POULTRY.

It is asserted in the "Transactions of the Society of Arts," that there is a great advantage in fattening geese, turkeys, and, in short, fowls of every description, on potatoes mixed with meal. On this diet they are said to fatten in less than one-half the time ordinarily required to bring them to the same condition of "excellence," on any kind of corn, or even on meal itself. The potatoes must be boiled and mashed fine while they are hot, and the meal added, just before the food is to be presented.

For the Southern Planter.

REVIEW OF BRUCE'S ADDRESS.

Mr. Editor,—Seeing that the slavery opinions of Mr. James C. Bruce, as expressed in an agricultural address, had excited much interest amongst our Northern neighbors, I sent to Richmond and procured a copy of the "Whig" in which it was published. After a careful perusal, I propose to avail myself of your columns, the legitimate medium of agricultural circumstances, to review the nature, character, and tendency of this discourse.

Of the author personally I know little, except that he bears the character of being one of the most wealthy, amiable, and intelligent gentlemen in the wealthy and enlightened region in which he lives; it was, therefore, with the most pleasing anticipations that I sat down to the perusal of Mr. Bruce's address. Mere *farmer* as I am, I waded, with some difficulty, through the political opening, which seems to me to be marked with a very vulgar and very erroneous strain of thought. I dislike very much the common slang about the evils of *party*.—Without party nothing that is great or noble would ever have been effected.—What is party but union and co-operation, the mighty levers by which the world has been raised? and what is political party but the united and concerted action of those who are willing to compromise minor differences for the sake of securing some great principle held in common amongst them? Things that are powerful are never harmless, and it is unquestionably true that this mighty engine may be worked for evil as well as for good; but the man who would reject it altogether for this reason, would be about as wise as he who would interdict the printing press, because it is not always devoted to the cause of virtue.

Nor does Mr. Bruce's idea of "freedom" find more favor in my eyes. "He who binds himself to man by any sort of chain; who basks in his smiles and writhes under his frown, is not free."—This is Mr. Bruce's test, and tried by it, I fear that even the *millionaire* of Halifax, if he be the worthy gentleman I imagine him, will be found reposing in the chains of slavery. The great object and result of civilization is to bind man to man, to make one individual dependant upon another, to summon each to the bar of public opinion in whose smiles the hero may bask, and under whose frown the culprit may wither. Society, government, and legislation have no other end and aim but this. The merchant who asks the patronage of his customer, the lawyer who desires the approbation of his client, and the politician who seeks the favor of the public, even although he do so in pursuit of his daily bread, only groan under the irreversible and divine decree to which the son of woman has been condemned. And let us never forget that it is the great merit of the glorious institutions which Mr. Bruce was called on to eulogize (the speech was delivered on the 4th of July) that they seek to diffuse equally the burden of this heavy load amongst the blacks that are doomed to bear it. That in pursuit of the approbation of our fellow-men, which is as needful to the purse of *most*, as it is grateful to the affections of *all*, the frailties and failings of human nature are prominently displayed, is undoubtedly true; but to select one class for this peculiar stigma, or to taint any of his fellow-citizens with the necessity of struggling for a livelihood, is what we are sure the good taste of Mr. James C. Bruce would be the first to deprecate; and yet this is what his language means, or it means nothing. I hope Mr. Bruce will excuse me when I add that the habit in which some of our agricultural orators indulge, of sneering at other callings, is neither graceful nor just. The several professions of life are the members of the body politic, equally dependant the one upon the other, connected together by an indissoluble link, all performing their several functions, and equally important to the great end they are destined to accomplish. I know it is much the fashion of the day to abuse the American people generally, and the inhabitants of Virginia especially, for their devotion to politics; but for my own part

I hope the day may never arrive when the citizens of this great Republic shall become like the sluggish Turk, indifferent to, or like the Russian serf, ignorant of the great principles of political economy.

But enough of politics; it was as a farmer that I intended to address an agricultural paper, and if I have been diverted from my course, I may find an excuse in the agricultural address I proposed to review. The gist of Mr. Bruce's discourse, the only portion perhaps which has excited the public attention, is contained in his observations upon the important and interesting subject of slave labor in Virginia. I will say nothing of the peculiar delicacy that surrounds this subject at this particular period; I will say nothing of the impolicy of re-opening a topic which, by common consent, has been buried, whilst the unauthorized interference of ruthless fanatics makes it dangerous to discuss it; but admitting the right of every citizen to judge of the propriety of such a course, I shall endeavor to show that Mr. Bruce's views have been conceived in haste and lack that serious and grave consideration with which this subject, if approached at all, should be carefully treated. I think Mr. Bruce's argument may be expressed in much fewer words than he has used to convey it. If I understand it, it is this. There are other portions of the world where agricultural labor yields greater returns than it does in Virginia; therefore, the Virginian is advised to remove his slaves to those more favored regions.

That some portions of the earth are by Providence more blessed than others, is unquestionable; though that any stand higher in the category than Eastern Virginia, may well be doubted. It is this oblivion of proximate blessings, and the tendency to see an El Dorado in every distant prospect, that renders us a nation of Arabs, and induces us to spend a life of migration in search of blessings that exist only in the vista of the future. This spirit is the curse of the country, and with it Mr. Bruce seems to be fully imbued. All the tender ties of *home* are to be severed; all the feelings of patriotism are to be forgotten in this vain and illusive wandering after wealth. Oh no, says Mr. Bruce, it is only the negro that is to be expatriated; the white man is to remain at home. But who is to set limits to this spirit when once it is aroused?—The same argument that would induce the locomotion of one species of labor would justify the removal of all, and its progress, instead of being arrested by the canefields of Louisiana, could only find its termination in the all-absorbing mines of Potosi.

It is a general principle of political economy that labor will flow into the most profitable channel, and it is the complaint of Mr. Bruce that the slave labor of Virginia does not follow this general rule.—Let us see whether in the first place this exception to the rule really exists, and if it does, whether it is supported by reasons founded in justice, or only rests, as Mr. Bruce supposes, upon ignorance and error. We will give the gentleman credit for his statistics and his figures. He shows that the labor of a negro man will yield in Louisiana a profit of $320, whilst in Virginia it would return only $100; that the negro hires in Virginia for only $50 per annum, whilst in Louisiana he will bring $200. Alas for the weakness of human nature! this all-absorbing love of gain needs no incentive from the *silvery* tongue of the orator of Halifax. Were it indeed true that the farmer of Virginia could convert his fifty dollars of slave labor into two hundred, even at the expense of those humane considerations that Mr. Bruce seems to value so lightly, I am afraid there would be too few of us able to resist the temptation of coining conscience into money. Not that I mean that even if this calculation were correct, it would ensnare a *large* portion of the humane slaveholders of Virginia. God forbid! No, I believe the complaint of Mr. Bruce, that many even of those who are satisfied of the pecuniary advantage of the scheme, fail to realize its benefits, is made not without reason. Still, I say, let not this calculation delude even those who look to pecuniary profit alone.—There are many items that Mr. Bruce

has failed to take into the account. To offset the additional hire of $150 that you are to get by sending your slave to Louisiana, you are to calculate the expense of the journey, the employment of an agent, and the increased risk of disease. Add to this the wear and tear of conscience for a violated humanity, and you will find that slave labor remains in Virginia only upon the great general principle with which we started, *that labor will of itself always flow into the most profitable channel.*

No, my friends, it is not in the enormous profits of sugar making, nor in the superior fertility of the virgin West that you will find the cause of Virginia poverty; nor is it in the diversion of your labor to the one or the other, as Mr. Bruce sagely advises, that you are to seek its remedy. If the competition of the West has reduced the standard price of your products, seek to increase the quantity by redoubled diligence and a more judicious system of cultivation; if your incomes are, still, less than they formerly were under the circumstances of a fruitful soil and a monopolized market, conform your expenditures to your income, and instead of sighing over the extra advantages that you once enjoyed, be satisfied that your portion, although shorn of its excess of good, still towers far above the common lot of humanity. In your genial climate, in your general healthfulness, in your vicinity to market, and in this very slave labor, you possess advantages that, with proper energy on your own part, will enable you to compete successfully in agricultural products with any portion of the American continent. But to do this, you must discard your overseers, and attend to your business in person; you must limit your expenditures, and accumulate the moneyed capital, that is absolutely necessary to the successful prosecution of every kind of business. If instead of entrusting the science of cultivating your soil and managing your labor to an illiterate, bigoted and uninterested overseer, you will take it into your own hands, and thus bring to bear at least the great incentive of self-interest, you need neither remove to the West, nor transport your slaves to the South. Over all the free States, the possession of slave labor gives you an immense advantage. Whatever it may be to the more complicated process of manufacturing, this labor is fully competent to perform all the simple manipulations of agriculture. In this respect it is equally efficient, whilst in the complete and systematic control to which it is subjected, it is infinitely superior to any white labor that can possibly, as yet, exist in this country. That the product per acre in the free States exceeds that of the slave States, is owing, not to the difference between the *operatives* in the one and the other, but to the difference in the character and conduct of the *proprietor*. In the one, the owner of a farm goes forth himself, and sees in person that every operation is conducted to the best advantage; that no less care is used in saving and dispensing, than in making his crop. In fact, it is a perfect manufactory of wheat and corn, where the processes are all subjected to the influence of mind. In the other, the proprietor leaves every thing to the guidance of an indifferent and ignorant subordinate, and then complains that he cannot enter the area of competition. Correct this, my friends, and abandon all idea of leaving your homes and changing your pursuits.

But that I have already occupied too much of your time, I could easily demonstrate that in the field of manufactures which Mr. Bruce proposes to you, you would meet much more potent competition from your Yankee brethren, than that to which you are subjected in your present calling. I could say something too of the political and moral advantages of an agricultural compared with a manufacturing community, but I leave this theme to the eloquence of Mr. Bruce, who, with a singular felicity, extols most extravagantly the one profession, whilst he commends the other to your consideration.

A VIRGINIAN.

Newly planted fruit trees should be watered in times of drought.

THE FIRST SAW MILL.

The old practice in making boards was to split up the logs with wedges; and inconvenient as the practice was, it was no easy matter to persude the world the thing could be done in any better way. Saw mills were first used in Europe in the 15th century; but so lately as 1555, an English ambassador, having seen a saw mill in France, thought it a novelty which deserved a particular description. It is amusing to see how the aversion to labor-saving machinery has always agitated England. The first saw mill was established by a Dutchman in 1663; but the public outcry against the new fangled machine was so violent that the proprietor was forced to decamp with more expedition than ever did a Dutchman before.—The evil was thus kept out of England for several years, or rather generations; but in 1768, an unlucky timber merchant, hoping that after so long a time the public would be less watchful of its own interest, made a rash attempt to construct another mill. The guardians of the public welfare, however, were on the alert, and a conscientious mob at once collected and pulled the mill to pieces. Such patriotic spirit could not always last, and now, though we have no where seen the fact distinctly stated, there is reason to believe that saw mills are used in England.

PASTE.

"Next to scissors," says an exchange paper, "paste is an invaluable editorial assistant," and we find the following recipe going the rounds for the best compound of this necessary accompaniment to the tables of all newspaper mongers, be they readers or manufacturers thereof. As we prefer the first sharp, and the latter sweet, says the North American, we look upon any scientific philanthropist who promulgates a new theory of paste as a Godfrey, a Franklin, a Fulton, a Davy, or a Morse. "You all do know," as Mark Antony said, that when paste is made in the ordinary manner, it soon becomes mouldy, and by fermenting in warm weather, loses its sticking power. To make some to keep, dissolve an ounce of alum in a quart of warm water; when cold, add as much flour as will make it the consistence of cream; then stew in it as much powdered rosin as will stand on a shilling, and two or three cloves. Boil it to a consistence, stirring all the time. It will keep for twelve months, (so says the newspaper,) and when dry may be softened with water. Think of this, ye who have a paste pot under your nose from one year's end to another; think of the flavor of cloves perfuming your room, instead of the villainous odor from fermented rye flour.

This is, doubtless, a very comfortable sort of paste. We have never tried it, but have no doubt such a compound will have all the good qualities promised for it. But all kinds of flour pastes have a defect which cannot be gotten over. When a piece of newspaper is covered on one side with it, and pasted down in your scrap book for future use, instead of a smooth, readable sheet, you find on opening it when dry, a dingy ill-looking surface, so much wrinkled as to be almost illegible,—"a sorry sight" indeed. This is owing to the irregular manner in which flour paste dries. Gum tragacanth is the right thing. This is a cheap article that may be obtained from any apothecary, and a very small quantity goes a great way. The proper method of preparing it for use is to place a few chips,—say half an ounce,—in a pint cup, and fill the cup about two-thirds full of water. In twenty-four hours, the tragacanth will have risen up to the top, and with the water will form a very clear and beautiful paste. About a teaspoonful of gum arabic placed in the cup with the other gum will be found an improvement, rendering it clearer and harder when dry. Of all pastes this is the best. It is clear and almost transparent when spread upon a surface, and does not wrinkle the paper in drying by one-half as much as any other sticking substance. As to the other matter, it certainly will not keep twelve months; but we have some on the table upon which we write this, which has been there nearly three weeks and is still perfectly good. And even

matory diseases. Hence it is, that in warm climates and in warm seasons of the year, when the *minimum* of oxygen is taken into the system, less carbonic gas is expelled from the lungs, and excess of carbon in the food, being the principal element of bile as well as fat, stimulates the liver—an important organ, and the antagonist of the lungs—to a copious and undue secretion of bile. Thus it is, that the human race—and domestic animals partake of the same injuries in a less degree—are evermore afflicted with bilious diseases in summer, and inflammatory complaints in winter.

"As the preservation of health is a matter that deeply concerns us all, and living as we do, in a climate subject to sudden and extreme changes in temperature, I have thought a few remarks upon the prevention of disease would not be unacceptable to those that I have the honor to address.

"In addition to keeping the body warmly clad in winter, it is important to keep the blood well supplied with carbon, which will combine with the excess of oxygen taken into the lungs by inhaling condensed air, and thereby prevent its chemical attacks upon the living tissues of the peculiarly exposed lungs. This supply of carbon in the blood can be secured by eating meat, and nutritious vegetable food, far more of which are needed in cold than in warm weather. Consumption is the consuming, the slow combustion of the tissues of the lungs by the chemical action of oxygen gas, concentrated or condensed by cold. Hence by fleeing from our northern winters to a mild climate, when only about one-half the quantity of oxygen—it being rarified by heat—is taken into the lungs at each respiration, consumptive persons often recover. On the other hand, persons living in warm climates in summer, and indulging too freely in animal and other carbonaceous food, and inhaling a rarified atmosphere, are afflicted with an excess of carbon, or with bilious affections. They come north to a condensed oxygenous atmosphere to regain their health, and generally find it. Living sparingly in summer, and sub-acid fruits that flourish most in warm climates and in warm seasons, and contain little carbon and much oxygen, is the true preventive of bilious diseases."

TOMATO FIGS.

Take six pounds of sugar, to one peck of the fruit, scald and remove the skin of the fruit in the usual way, add the sugar and scald over the fire until they look clear—spread on the dishes and dry in the sun, dip them in the syrup once or twice while drying; when dry pack them down in jars, sprinkling a little sugar between each layer. The syrup left can be bottled for use and makes healthy beverage with cold water. (Aunt Dolly says these figs are better than real ones.)

For the Southern Planter.

KEEPING SWEET POTATOES.

I always keep my potatoes in pits dug underneath my top stacks. These pits are about two feet deep, and as wide as the stack will admit—the length, from fork to fork that support the top-pole of the stack. Before storing the potatoes away, I have the sides and ends of the pits well planked up, and the bottoms covered about two inches thick with pine beard. I also have a layer of pine beard up the sides and ends about the same thickness as that which covers the bottom. This layer is placed along as the potatoes are packed away; the pits being nearly filled with potatoes. I cover them over lightly with pine beard, and finish the covering with poles and dirt, the dirt being thrown on last, *lightly*, taking care to stop the apertures between the poles so that no dirt can pass through. In this way I have kept hundreds of bushels of potatoes, without the loss of five. Care should be taken before storing away potatoes for winter use, to have them carefully picked over, and all such as are cut, broken or bruised thrown out; to avoid bruising potatoes much, they should be handled lightly. With a view to keeping my potatoes in this way, I have my

stacks made upon elevated places so that the water may pass off without soaking in the ground much; thereby I keep the pits perfectly dry, which is all important. When I took up my planting last spring, kept as above directed, out of twenty bushels there was not a half bushel injured.

G. R.

Sussex County, Sept'r, 1847.

From the American Farmer.

EXPERIMENTS WITH GUANO.

During the present year I have made several experiments with guano, in order to test its value under different circumstances; the results of which I present to your readers. The most important fact which I have been enabled to establish to my own satisfaction is, that guano, like every other stimulant, by excess or improper use, may prove as detrimental to crops, as its well directed employment will reward the enterprising husbandmen. Guano, however, is not a mere stimulant without partaking in a great measure of the nutritive character, for undoubtedly the essential elements of seeds may be derived from its constituent materials, and probably other valuable products in the form of secretions, &c.; but as a vehicle for the introduction of common nutritive matter, it takes a permanent rank with other bases and saline ingredients of the soil, thereby promoting vigorous growth in vegetables when sufficient aliment is provided them. If on the other hand the soil be incompetent to supply fresh food so fast as it is disposed of by the organs of the plant, the consequences are disastrous, if not fatal. During the drought of this season, a portion of my corn, upon which guano was liberally strewed, fired just as when ashes or other stimulants are dropped in or upon the hills; and what satisfied me that it was not the drought which in this case caused the injury, but an insufficiency of pabulum, is the fact that a portion which was freely watered suffered to a considerable extent, but in a less degree; whereas another patch, far richer in vegetable mould and stable manure, on which the same quantity of guano was spread broadcast, flourished admirably, although it was not artificially watered. I may add, that the ground in both cases was well worked; so that I felt convinced that no amount of carbonic acid, ammonia or the vapor of water from the air, will at all compare with either the natural supply, derived from decomposing vegetable and animal matter, the refreshing draughts of rain, the penetrating influence of subterranean moisture, or irrigation. Indeed, during a severe drought it may be questioned whether an exposure of the partially moist under surface to the atmosphere does not allow more of the gases and vapours to escape than the ground absorbs in turn; and for this reason I hesitated to plough or disturb with the cultivator certain spots, unless the appearance of the clouds indicated falling weather, as I uniformly found that a contrary course left the field more dry and unpromising, notwithstanding an occasional deposition of dew.

In this connexion I may mention another fact which I established during the prevalency of the drought, that one good watering on a portion of some early corn in my garden was worth twice the amount of water applied at different times in small quantities, because in the former case the water soaked in and remained for a considerable time available, whereas in the latter, the sun of the succeeding day generally dried it up, if the hill was opened with the hoe, or if not opened, a hard cake was formed on the surface almost impervious to the air, the oxygen of which I regard as serviceable to vegetables as to animals; at least the oxidation of organic matter in the sap or blood is essential to their vitality, all the doctrines about the contrast between vegetable and animal respiration to the contrary notwithstanding. The above facts warrant me, I think, in concluding that guano presents in a condensed and therefore convenient form, most valuable materials for vegetative life, and that its use must be regulated by the condition of the soil, so that *cæteris paribus*, more may be employed profitably on good ground than on bad;

and that on barren fields, I would say fields comparatively destitute of organic matter, it requires very judicious management to prevent it from disappointing the purchaser. Other experimenters in this vicinity will probably coincide with me in this opinion. It seems to exhaust the soil at once, and thus leaves the plants with the chances of a precarious existence—first, there is a rapid deposition of tissues, and afterwards as rapid an absorption and disintegration of the succulent matter within the meshes of the newly formed leaves and stalks, without an adequate resource to fill its place, and some to spare if the plants be young and thrifty. I am not one of those who look upon the tendency of science to promote the artificial stimulation of animals and vegetables as *per se* prejudicious—provided the truth be fairly understood and acted upon—that the supply of nutriment must be equal to the demand, neither more nor less; for repletion may as effectually thwart our efforts at the improvement of races as inanition. The education of a child may terminate in disease or death by overtaxing its powers, while a judicious exercise of its bodily and mental functions may result in health and happiness.

The decay of families in the higher ranks of society, and the potato rot, I am inclined to attribute to one and the same cause—luxury, or an extravagant stimulation of a part of their natural functions, whereby the others are enabled to support the system which gradually sinks. Consumption in animals or vegetables is a penalty for living too fast; it is more generally the fault of our predecessors; but such is the decree and we must submit. If its occurrence is but seldom among the more temperate races of men, or in those esculents which are raised in virgin soil and in primitive fashion, there is reason to believe that it is because they have not been so highly developed by artificial stimulations. There are epidemics which sweep over extensive countries, prostrating at one time the human race, at another time cattle, and at another some species of plant peculiarly sensitive to their virulence; and the potato disease may be considered by some a visitation of Providence of this nature; but when we reflect upon the injudicious use of excitants in these latter days; and that it is not merely the animal or vegetable immediately concerned which suffers, but the succeeding generation; we may infer that the appointed time will arrive, however long delayed, when a continued system of abuse or mal-practice will bring its reward in the annihilation of certain races and the commencement of others in their stead—a law of nature which will not allow any simultaneous disappearance of living beings to the endangerment of her whole economy, but replaces a lower family by one higher in the scale, thus making her creative efforts always progressive in the long run. From the records of the past it would seem as if a portion at least, if not the whole race of certain animals and vegetables, must die out before other kinds start into life—the former being instrumental, directly and indirectly, in organizing germs of a superior order of being. I do not mean that the forces which were brought to bear upon the new comers and ushered them into immediate existence, were derived exclusively from their immediate parents, for the physical changes which must constantly occur during a long course of ages, may well be considered capable of modifying types and introducing forms which may correspond with the changes alluded to. As then new genera and species may be traced through gradual changes in their organization to assume at length a totally different character, and to struggle with their progenitors as it were for an ephemeral existence, so the vegetable and animal tissues all originating from the globule or cell, after receiving *en passant* a taint or suspicion of similarity, proceed in their journey of life to higher offices, and present the most diversified textures. The operations, however, of nature always preserve an analogy, and we find that these advances are attended with contemporaneous retrograde movements on the part of other organized tissues or organizable materials,

and that to the last, the first are mainly indebted for the forces requisite to perfect their destiny. The analogy stops not here—when new organs are formed, they are based upon those previously existing, which are forced to make room for the parvenue, if they do not flee before them at their approach and become annihilated. In fœtal life the law can be recognized without a shadow of doubt. But what has this to do with guano? I will endeavor to show its connexion with my subject.

Guano is a new element of agriculture in North America, and what changes it is destined to produce, time will show. Cotton and potatoes have done more than the sword in shaping the institutions and habits of modern nations; apparently trivial objects in our branch of business have accomplished wonderful results.—Let us look to guano and the mineral manures in general with as close an eye as botanical practitioners of medicine scrutinize the effects of what they are pleased to call poisons on the animal system. I am prepared to expect new phenomena from its use or abuse in accordance with its acknowledged power as a stimulant. It is premature to speculate upon any marked peculiarity of its action, but I may be permitted to suggest that if nothing more is gained for a period of years by its proper application, than an extraordinary increase in the quantity of breadstuffs and excellence in their quality, attended by as extraordinary a decrease of labor and expense, we may at this particular juncture of affairs congratulate ourselves and the world at large—and moreover that if the potato is soon to be ranked among the things that were, (which God forbid,) we may confidently promise our foreign customers that a good substitute is Indian Corn, which we intend to season highly with guano for their especial appetite and our own particular profit.

ROB'T SERRELL WOOD.

Mt. Hermon, near Washington, D. C.

Tomatoes make excellent preserves.

TO PREPARE BONES FOR MANURE.

As mills for grinding bones are very costly, it is a great desideratum for the farmer to know how he can otherwise prepare them for his crops. By the following simple method he can reduce them to a fine powder and increase their value four fold:

Take one hundred pounds of bones and place them in a kettle, or in an old tub unfit for further use, or even in a hollow scooped in the ground, and made tight by lining with clay. Next take from thirty-ty to thirty-five pounds of oil of vitriol (sulphuric acid,) mixed with one-third to one-half its weight of water, and pour over the bones. In a day or two, the bones will dissolve into a liquid paste, to which there must be added, by stirring in wood ashes or fine mould, until it is of the consistency of thick mortar. Put the mixture under cover out of the way of rain, and in a few weeks it will become a light dry powder, which may be applied by the hand or otherwise, to any kind of land that may require it. In preparing this mixture, great care must be observed to keep the oil of vitriol from touching the clothes or skin, as it will burn them as badly as fire.

The oil of vitriol, for this mixture, must be of a first rate quality, otherwise it would require a greater quantity than given above to dissolve one hundred lbs. of bones. The mixture answers best for a turnip crop; but it is highly valuable for other roots as well as for grass and grain. It should be applied at the rate of twenty to forty bushels to the acre, sown broadcast on grass land, in the spring, or on grain and turnip crops after harrowing in the seed. For gardens or field crops planted in rows or drills, as roots, corn, beans, peas, &c., it may be applied in the hills or rows at the time of sowing, or it may be afterwards sprinkled around the plants at the time of hoeing.—*American Farmer.*

Avoid a low and damp site for the dwelling house.

ECONOMY OF LABOR-SAVING MACHINES.

A little reflection will show, that to save time is a great gain, while a liberal, though economical expenditure of money is equally so. Labor-saving machines in a farm-kitchen are, therefore, of the utmost importance, as they not only save time, but strength; for instance, if a farmer expends a few dollars in the purchase of a churn so constructed that it will bring butter in five, ten, or twenty minutes, and afterwards work the butter fit for printing, and this only by turning the handle (and there are such churns now in use), he will soon perceive that he has gained more than at first sight he could think possible. If he adds to this, pans for hot water, in which the milk-pans can be placed to prevent the new milk from cooling too rapidly, he will find on churning day, that he has gained one-fifth more butter than by the ordinary method. If such liberal conveniences are allowed the farmer's wife and daughters, as the modern sausage-chopper, that noiseless friend to the farmer's wife, that will silently do in two hours what it would take a man a whole day to accomplish by his single arm, or if a wood-shed in which the kitchen shall open, where a space can be portioned off for barrels and boxes that are to be receptacles for all sorts of things that the women should have in use close to the scene of their labors, and to receive trash that otherwise would be thrown out, littering the yard, and giving an air of unthrift that is always disgusting, and if saved in barrels and carefully collected on a compost heap, will serve as manure for the garden or farm, of the best quality, the farmer himself will find in a short time, that in saving his strength, time, and health, he has gained at the end of the year, at least, the price of the labor-saving machines, and the following year, there will be a clear profit of money as well as time, that can be spent more profitably in lighter and equally useful occupations. If in the above mentioned wood-house, a row of barrels be placed close to the kitchen door, one for ready made soap, one for soap-fat, into which is previously placed twenty-five pounds of potash, and two barrels of water, one for pig-slop, another for bones and all the worthless scraps and sweepings of the house, and another for chicken feed, the following results will take place:—The soap being close at hand, can be used, when it is wanted, and there will be no excuse for things not being kept perfectly clean. If the barrel of potash and water be kept close at hand, ten times as much soap-fat will be *gathered* and *saved*, as if the barrel were not there; for it will take no more time to throw it there than into the pig's barrel, or to the dog. The potash will prevent the fat from becoming mouldy, or filled with skippers, which it is apt to do when collected in the usual way. The soap will make itself, if stirred once or twice a week. Potash, instead of lye, is most economical, as it is more certain in its results; and the ashes are more valuable on the manure heap or pasture land than what the soap is worth. The pig-slop will be under the mistress's eye, and ingredients neither too good nor too bad will be put in. The bones and scraps, now so highly prized as manure, may all be saved; and last, not least, dirt is not made, and the time and strength that would otherwise be taken in cleaning and scouring are saved for better purposes; and the chickens may be regularly fed without waste of time.

On a farm, as in a beehive, all should be workers, and the drones sent off. The women as well as the men, should work; but all will find that the best economy is to save, whether it be in time or money, or strength, though all should be diligently, carefully, and liberally used, if the farmer wishes to thrive. If from a careful management of time, you save one hour a day, either from unnecessary sleep, pleasure, or ignorance, you will gain in five years, seventy-five days and two hours for profitable improvement of mind or means.—*American Agriculturist.*

Sulphur is very valuable in preserving grapes from insects.

From the National Intelligencer.

ROOT PRUNING.

It has been ascertained that the best mode of pruning fruit trees is what is called *root pruning*, especially in gardens, and when applied to pears. It has been found, too, that the best way to produce precocious fruitfulness in this fine species of fruit is to graft on the quince stock, from its being almost an equatic tree, and flourishing in nearly all soils. English gardeners have said that "pears engrafted on the quince stock give the finest fruit, and this has been found to be true." In relation to root pruning, I give the following, the remarks of a very skilful cultivator of England, Mr. T. Rivers, which will be found useful, to those especially who cultivate fruits in gardens. The practice has been adopted in England for about ten years with great success.

"For immediate effect, the tree should be prepared by annual root pruning for one, two, or three years in the nursery; but, if not so prepared, trees of the usual size and quality may be planted and suffered to remain two years undisturbed; unless the soil is rich and they make vigorous roots the first season after planting, operations may then commence the first season. Thus, supposing a tree to be planted in November or December, it may remain untouched two years from that period, and then, early in November, if possible, a circumferential trench, ten inches from the stem of the tree, and eighteen inches deep, should be dug, and every root cut with a sharp spade, which should be introduced quite under the stem at about fifteen inches in depth, so as to completely intercept every perpendicular root." (The spade should be steeled at the edge and very sharp.) "The following year, the third from planting, a trench may be again opened at fourteen inches from the stem, so as not to injure the fibrous roots of the preceding summer's growth, and the spade again used to cut all the circumferential and perpendicular roots that are getting out of bounds; the fourth year the same operation may be repeated at eighteen inches from the stem; and in all subsequent root pruning this distance from the stem must be kept. This will leave enough undisturbed earth around each tree to sustain as much fruit as ought to grow, for the object is to obtain a small prolific tree."

The writer observes that a perfect ball of fibrous roots is formed in the course of a few years, which requires to be occasionally heaved down to ascertain if any large feeders are making their escape from it. Each tree should be manured every autumn, and the manure suffered to be washed in by the rains of winter and drawn in by worms. "The great end to attain," he says, "is to give the mass of spongioles enough nutriment in a small space, but not too much, so that a tree will make shoots about four inches long in one season, and at the same time be able to produce an abundance of blossom-buds and fruit. On trees of many varieties of pears the former will be in too great abundance. I think removing a portion in early spring would be an improvement in pear culture."

In relation to pruning the branches he says: "All that is necessary is the occasional removal of a crowded branch, the fact being that root pruning almost does away with the necessity of branch pruning; sometimes, however, a root will escape the spade, and then in the following summer a vigorous shoot or two will make their appearance; these should be shortened in July* to within four buds of their base, and the following autumn the feeding root must be diligently searched for and pruned."

Mr. Downing, in his valuable work on the Fruits and Fruit Trees of America, says that "root pruning in this country will be most valuable in its application to common standard trees which are thrifty, but bear little or no fruit. They will generally be found to require but a single pruning to bring them into a permanently fruitful condition; and some sorts of pears and plums which do not usually give a fair crop till they are twelve or fourteen

* Any shoots inclined to vigorous growth should be shortened this month, as it tends to the formation of incipient bloom-buds.

years old may be brought into fruit by this means as soon as they are of proper size." As to the best time for pruning, he thinks that *a fortnight before midsummer is by far the best season, on the whole, for branch pruning in the Northern and Middle States.*" For he very justly supposes that "wounds made at this season heal over freely and rapidly; it is the most favorable time to judge of the shape and balance of the head, and to see at a glance which branches require removal, and all the stock of organized matter in the tree is directed to the branches that remain." W.

POWDERED CHARCOAL.

As charcoal is a great absorbent of ammonia it is an excellent thing to sprinkle (in a powdered state) over all manure heaps, and particularly over those places where animal filth is allowed to accumulate. It destroys the odor and renders it better for manure. It is also said to prevent the larvæ of insects from becoming flies or moths. A writer in the American Agriculturist states that pigs eat charcoal and are thought to fatten on it, and that in the course of the summer months he frequently throws a bushel or so at a time into his pen. He says he finds it makes the manure so much more valuable that he finds it worth while to buy charcoal for the purpose, and that by using it his pens are never offensive.

TO PREVENT WOOD DECAYING.

Take twelve ounces of rosin and eight ounces of roll brimstone, each coarsely powdered, and three gallons of train oil. Heat them slowly, gradually adding four ounces of beeswax, cut in small bits.—Frequently stir the liquor, which as soon as the solid ingredients are dissolved, will be fit for use. What remains unused will become solid on cooling, and may be re-melted on subsequent occasions. When it is fit for use, add as much Spanish brown, or red or yellow ochre, or any color you want, first ground fine in some of the oil, as will give the shade you want; then lay it on with a brush as hot and thick as you can; some days after the first coat is dried give it a second. It will preserve plank for ages, and keep the weather from driving through brick work. Common white paint may be used on top of it, if required, for the sake of appearance. Two coats should always be given and in compound machinery, the separate parts should be varnished before they are put together, after which it will be prudent to give a third coating to the joints or to any other part which is peculiarly exposed to the action of moisture, such as water-shoots, flood-gates, the beds of carts, the tops of posts, and all the timber which is near or within the ground. Each coat should be dry before the parts are joined or the last coat applied. The composition should be applied when the wood is perfectly dry. It is necessary to mention that compositions made of hot oil, should, for the sake of security, be heated in metallic vessels, in the open air, for when the oil is brought to the boiling point, or six hundred of Fahrenheit, the vapor catches fire, and though a lower degree of temperature should be used in this process, it is not always possible to regulate the heat, or to prevent the overflowing of the materials; in either of which cases, were the melting performed in a house, fatal accidents might happen.—*Archives of Useful Knowledge.*

CATERPILLARS.

An English Agricultural paper gives the following method of destroying caterpillars, which was accidentally discovered, and is practised by a gardener near Glasgow. A piece of woollen rag had been blown by the wind into a currant bush, and when taken out was found covered by the leaf-devouring insects. He immediately placed pieces of woollen cloth in every bush in his garden, and found next day that the caterpillars had universally taken to them for shelter. In this way he destroys many thousands every morning.

EXPERIMENT WITH CLOVER AND TIMOTHY SEED.

Desirous of learning, by direct trial, at what depths clover and timothy seed would germinate, I made a narrow trench in a favorable situation, three and a half feet long, increasing in depth from the surface at one to the other end, where it was six inches deep. The bottom of it was therefore an inclined plane, and was made smooth and even, by pressing a straight-edged board forcibly upon it. Thus prepared, the seed was sown thickly in the trench, its whole length. In twenty-four days, at an average noon temperature of forty-five degrees, the plants appeared at the surface for four inches from the shallowest end towards the deepest part of the trench; and afterwards continued to appear from still deeper portions of the ground for seventeen inches, when it wholly ceased to vegetate. Three months have now elapsed, and not a leaf has shown itself beyond the point just named. The clover and timothy sprouted alike, and ceased to germinate at the depth of two and a half inches. The plants are now nearly a foot high, at the shallow extremity of the trench; and diminish in stature as the trench deepens, the lowest being about five or six inches in height. The intelligent farmer will, of course understand the object, and appreciate the value of this experiment.

Some of the same seed was scattered on the ground, at the same time, and left uncovered. It vegetated in due season; its radicles, from an eighth to a fourth of an inch long, lay exposed to the snow and frost for some time, and finally found their way into the earth. J. T. P.

DROWNING.

A notion prevails, very extensively, as we judge from reading the newspapers, that drowning persons never rise to the surface more than twice; or, in other words, that if a person falls into the water his third time of sinking is sure to be the last, and fatal. In almost every published account of rescue from drowning, it is mentioned that the man or boy was sinking for "the last time" when the timely aid arrived. We apprehend that this is altogether an idle notion, and the belief in it may possibly work mischief by inducing suspension of effort to rescue. There is no magic in number three; no inscrutable and inevitable reason why a drowning person may not come to the surface a half-dozen times and sink as often. It is possible enough that in ordinary cases the strength and vitality of the sufferer may be so exhausted by three sinkings as to make another rising impracticable; but even of this there is no specific evidence. We have known persons to be drowned without rising even once to the surface, and inferior animals we have seen go down and come up again many times before life was extinct.—*New York Commercial Advertiser.*

For the Southern Planter.

RECIPE FOR BLACKING.

Have a basket full of elder berries gathered when fully ripe, and put into an iron pot; let them be slightly mashed; after adding a good portion of water, boil till the juice is well extracted. Strain off the liquor and boil till it thickens a little. This simple preparation makes an excellent blacking. A supply may be made, and kept for twelve months if put in bottles and corked well. Water must not be added to the blacking after boiling, or it will cause it to sour and spoil.

CULTURE OF WHEAT.

In an interview we recently had with General Harmon, of Wheatland, Monroe county, he communicated some important facts, from his own experience, on the culture of wheat.

The system of wheat cultivation generally adopted in Western New York, is this. The wheat is sown in a clover turf, or summer fallow, from the 10th to 15th of September. The quantity of seed is usually one and a quarter bushels per acre. Sowing a larger quantity produces

a finer straw with shorter heads, and earlier maturity, but does not, on the whole, afford a greater yield. If sown earlier than the time above specified, it is liable to the attack of the Hessian fly. This is an insect that appears at all seasons, contriving to get its living from other sources, when wheat is not to be found, but particularly productive and abundant when this crop comes forward early in the fall. The grain-worm has not yet infested the fields in the western part of our State. If sown later than the 15th of September, it does not root as well, thereby exposing it much more to winter killing, and it does not tiller as well, by which it matures later, and is more liable to rust. The wheat ripens from the 7th to the 27th of July, averaging from the 15th to the 20th; and it should be cut as soon as out of the milk, when the berry yields easily to the pressure of the thumb and finger. As good a wheat crop as was ever raised at the west was produced in the uniformly cold season of 1816. It is probable that the superior wheat of England is owing to the longer time required to ripen it, by which the berry is enabled to fill up more moderately, but much more effectually. Our warm summers, on the contrary, push it forward so rapidly, that it does not have time to mature so large, full and complete a grain.

Before sowing, the seed should be washed in strong brine, which may soon be turned off and a quart of lime to every bushel is then added and intimately mixed. After standing a few hours, say 12 to 24, it should be sown. When very smutty, the wheat should receive three thorough washings in strong brine, and lime as before, and this has been found effectual in securing the future crop from smut. Hatch's machine is used to some extent in sowing wheat, and all other kinds of grain broadcast, as also plaster. With this a boy will sow about twenty acres a day, and more evenly than can be done by the most experienced sower. It costs forty dollars, and is easily kept in repair. The seed does better by changing, and especially from poor lands to richer.

American Agriculturist.

DAIRYING.

Experiments are being made with glass milk pans in England. It is thought by some that they will be found very excellent articles. The price, it is said, will not be high, and it is supposed that they have an advantage on account of the purity of the metal, and their being no risk of any injurious action which may injure the cream or prevent it from rising. Cheap China has been recommended and sometimes tried for milk pans. It is thought by some that milk pans should be shallow. This subject was discussed at a late agricultural meeting in England. One man stated that he believed it had been demonstrated that the same measure of milk poured into a vessel allowing it to stand two inches deep, would cast nearly twice as much cream as it would do if its depth were eight inches. Now does the experience of dairymen in this country agree with this? We should be glad to know.

At the meeting above alluded to, Mr. Greaves stated that he had found in his own dairy that a piece of saltpetre about the size of a hazel-nut, dissolved in warm water, and mixed with every gallon of new milk as soon as it is strained, not only caused the milk to cast its cream better, but had the effect of removing from the butter every disagreeable flavor arising from the herbage of particular pastures, such small addition to the milk, of so well known and simple saline substance, imparting to it a wholesome character, rather than otherwise, in a dietic point of view.

We have seen saltpetre used in this way with good effect.

Another gentleman at this meeting spoke of the *syphon* for separating milk from cream. The syphons were made of block tin, with a tube about a quarter of an inch bore. They are completely self-acting, merely requiring to be inserted in the milk and set at work, the stream continuing to flow by such decantation until the cream presented itself for admission into the lower orifice of the tube, when its greater body and less fluidity prevented

its free passage, and the syphon gradually stopped of its own accord. This complete draining of the milk from the cream, rendered the butter very superior in its keeping properties.—*Cultivator.*

HESSIAN FLY.

Among the many things that annoy the wheat crop, this is frequently the most annoying. It is not now our purpose to touch upon its history or nature; but we wish to sum up what is considered by the most experienced as the best measures to avoid its ravages. We have never heard of any *remedy* which we could deem effectual; and we have given up all hopes of the discovery of such. But although we cannot entirely protect our wheat from the depredations of this insect, there are ways of opposing and avoiding them, and means by which we can insure fair crops.

The best authenticated of all remedial measures is to MANURE THE SOIL. If you make your land rich, you will have little reason to fear either the fly, or the rust, or the winter-kill. All observers agree that other things being equal, poor lands invariably suffer the most. We may see this proven by any field of wheat that has suffered from the fly. The parts that have suffered most are invariably the poor knolls and ridges. Yet the fly is by nature prone to damp and shady situations. If the intervening hollows were as poor as the hills they would prefer them; but they are enriched by the fine particles of earth which have been washed down from the ridges. Consequently from their greater fertility the grain is there able to withstand the attacks of the enemy. This is the true reason why sandy soils suffer most from the fly. Such soils are easily exhausted of the fertilizing agents which they contain. It is doubtless the additional strength that the plant derives from a rich soil that enables it to spare some of its fluids for the sustenance of the insect, and still produce a vigorous growth. Besides, it is the first shoots sent up by the seed that are attacked. When these are destroyed if the soil is an impoverished one, the kernel itself dies; but if the ground is rich its vitality will continue and it will send up fresh shoots, which being after the time of the fly, will have a fair chance.

From this fact, that it will only do to sow wheat in rich ground, the fly has proved a blessing instead of a curse in many farming districts. A writer (Ezra L'Homedieu in the *Trans. N. Y. Soc. for Prom. Agric., &c., I.* 5), says, "The land in Suffolk county and other parts of Long Island was easily tilled and by continual cropping with wheat was so reduced that on an average not more than five or six bushels were raised to an acre. This mode of husbandry was still pursued, and although the land was gradually impoverished, the farmer found the crop, though small, would more than pay for his expense and labor. The Hessian fly put an end to this kind of husbandry, and in that way has proved itself instead of a curse, a blessing; no other way being found to prevent the injury done by this insect, than by highly manuring the land." The same thing has taken place in Delaware.

A rich soil then is the surest way of all to get a good crop and to defy the Hessian fly. The next best measure to save the wheat is one very easily resorted to, and which is recommended on all sides by the most trustworthy cultivators. It is *late sowing.* As is well known the fly comes just after the wheat is a little above the soil if sown at the usual time. If sown later than the usual time of their advent the wheat is safe. It is everywhere allowed that the earliest sown fields of wheat are the most infested, and where early sowing has been practised for a number of years, a visit from the fly may be expected. Dr. Asa Fitch (in an able pamphlet upon this insect, which we recommend to our readers,) says: "Just before harvest our attention was directed to two fields of wheat in the neighborhood of the town of Stillwater, one of which was seriously injured by the fly, whilst in the other not a solitary straw broken by the insect could be found. The only cause to which this striking contrast could be imputed was that the latter field had been sowed a fortnight later than the other. Analogous instances have often occurred to every one living

in districts where the fly has been present." This case seems to prove more than it does prove. The safety of the later field was owing perhaps as well to the fact that the flies of that neighborhood had found all the accommodations that they desired in the field first up, and had no occasion for the second, as to its being sown so short a time after their season. But it is universally admitted that this is one of the secret methods for avoiding them.

True, this late sowing renders the crop liable to two other mishaps—the winter-kill and the rust. But if our first advice is adopted—to *enrich the soil*, these will be prevented as well as the fly. If the ground is rich the roots of the wheat will have acquired too much strength to be broken and thrust out by the heaving of the ground from frost; and the crop will attain its maturity too early to be in danger of the rust. So this is the true plan after all.

Another method for avoiding the fly was proposed many years ago by a writer who signed himself "A King William Farmer," and which was the subject of some very interesting controversy between General Cocke, Dr. Merryweather and James M. Garnett. This method was to cover the seed deeply. The following facts were deemed to be established by that controversy. That when a kernel of wheat is buried to the depth of three inches, it sends a single stem upwards, which within an inch of the surface forms a crown, sending from that point a tuft of fibrous roots downwards, and a tuft of blades upwards. These become main roots and stalk, if undisturbed. But if these be destroyed by the fly, a new set of shoots start directly from the deeply buried kernel, and these shoots are never attacked by the fly. A kernel, on the other hand, but slightly buried, sends up its blades at once directly from the seed; if these be attacked, therefore, the whole will be destoyed. But unless the soil be good the seed is very apt to die when the fly meddles with it, whether it be deeply or lightly covered. And whether it lives or dies, this method does nothing towards either destroying the insect or frustrating their operations. In fact, you sow for two crops, one to be harvested by the fly and the other for your own use.

Many steeps for the seed have been recommended. Some of these have been used with a view to destroy the eggs, as decoction of elder, &c., but we regard this as proceeding on an erroneous principle, viz: that the eggs of the fly are deposited in the seed. Other steeps have been recommended because they accelerate the growth of the wheat, and thus enable the farmer to sow later than he otherwise would be able. Saltpetre, four ounces to water sufficient to wet a bushel of grain, is perhaps the best of these. After soaking twenty-four hours, it is spread out and dried twelve hours.

In 1817, Gen. Cocke directed public attention to grazing, as a method by which a good crop may be obtained from a field after the fly had attacked it. When it is seen that the fly is at work upon it, and the wheat is full of eggs if sheep and other stock are turned on it, they will eat down the crop in a few days. The eggs will thereby be destroyed, and the fly no longer finding a place to deposite more, will go somewhere else. If the land is good, the wheat will spring up again and no injury will be experienced by the crop. Rolling the wheat field is another measure which has been tried with advantage. Dusting the wheat with lime, ashes, and soot and dragging elder bushes over it, (the smell of which has been supposed to be obnoxious to the fly,) are methods which have been tried with but doubtful success. Smoking the field is another plan which has been resorted to for the annoyance of the fly. This is done by making a ring heap of damp brush, chips and other trash to the windward of the field in the evening, when the smoke will lie on the ground and creep along among the wheat. Its efficacy is supposed to be increased by the addition of tobacco, brimstone, &c. We have small faith in any of these measures.

Until farmers come to some definite understanding about the matter, there is very little hope that we shall be able to do much towards the destruction of this troublesome insect. Yet countless millions of their eggs may be destroyed by a very simple method. If some

particular field be sown very early, so that it may serve as a nest for the flies before the rest is up, it will become completely filled with them. By then turning it in with the plough, they will be destroyed. If farmers throughout the land would agree upon a combined and simultaneous action in this way much might be done.

We conclude this article with the following catalogue of the varieties of wheat which are less liable to the ravages of the fly, which we take from the work already quoted:

That there are any kinds of wheat which are perfectly "fly proof," (to use a common and expressive term,) as has been sometimes stated, we wholly disbelieve. At times when the fly is so excessively numerous as to attack barley and rye, it is not probable that any of the cultivated species of the genus *Triticum* can entirely withstand its attacks. But that there are kinds of this grain that escape with little injury, when other kinds are almost wholly destroyed, is a well established fact.—What the peculiar properties possessed by these varieties are, that render them thus singularly invulnerable, has never been investigated with that degree of accuracy which so interesting and important a subject well merits. Mr. Worth supposes that fly proof wheats must have smooth leaves, affording no grooved or channelled surface to hold the eggs of the fly.—(*Amer. Far.*, II., 181.) Mr. Smeltzer thinks the leaves of such wheat stand out horizontally from the stem, or incline downwards, instead of being erect, and that the egg is thus washed to the ground by rains.—(*Patent Office Report*, 1844, p. 434.) The Hon. J. Taliaferro regards the immunity as proceeding from the strength and vigor of the roots, whereby the plant continues to grow, notwithstanding the exhaustion of its juices by the worm —(*Patent Office Report*, 1842, App No. 1.) This theory appears to us more plausible and more in accordance with the facts recorded with regard to these varieties, than any other which has been proposed.—Other opinions less specific, might be alluded to, but all of them are opinions merely, as we discover no evidence of their having been substantiated by a diligent investigation of this point. The reputation of the Underhill wheat has already been sufficiently shown. This was a bearded white-chaff, with a plump yellow berry, requiring to be thoroughly dried before grinding, and then producing flour in quantity and quality equal to the best of the other varieties. Its fly proof quality was by many supposed to be owing to the hardness or solidity of its straw. The fly freely deposited its eggs upon this wheat, but it was seldom, if ever, materially injured by it. The Spelter wheat (*Triticum spelta*, Linn.,) was also long since remarked as never having been injured by the fly. This is so very inferior a species, that it is but little in use in this country, and only cultivated because it will grow well on the poorest soils, whether the season be wet or dry, and is free from all maladies. It has a long, slender, beardless head, with the chaff so firmly attached to the grain, that it can only be separated by passing through a mill, and yields a yellowish flour. It is more highly esteemed in Germany than in any other country, being there preferred even to all other kinds of wheat. The China wheat, said originally to have been found in a crate of imported China ware, branches and grows very much like rye, ripens at least a week earlier than other varieties, yields largely, (forty or fifty bushels per acre, it is said,) and has never been known to be injured by the fly.—(*Patent Office Report*, 1844, p. 43.) The Mediterranean wheat, in such high repute for its fly proof and other qualities, was introduced into Maryland in 1837. It is a light red-chaff, having a long stiff beard, a long, red, and very flinty berry, and ripens about ten days earlier than other varieties. Mr. Garnett, in his Fredericksburg address, considers its only title to be designated as fly proof, is, that it recovers better than other wheats from the depredations of this insect. In the Southern Planter, (Vol. II., p. 243,) it is said to be a coarse dark grain, much like rye, and yielding such indifferent flour, that some of the merchants had announced they would buy no more of it. Its straw, too,

when grown upon a fertile soil, is said to be too weak to support the head. Mr. R. L. Wright, in the American Agriculturist of 1843, and others, state that it improves by cultivation. As it becomes fully acclimated, it will, we doubt not, lose its most objectionable traits; but will it not with them also lose its fly proof and other qualities, which are its main recommendations at present? On the whole, this variety is so very prolific, and so exempt from all diseases, that we are not surprised at the marked favor it has received. It is admirably adapted for securing a premium in our agricultural societies, where "the largest crop, raised at the least expense," receives the prize; but its grower will be reluctant to inform his neighbors, that he sells it in market at six cents per bushel under the current price. In fine, we think this noted variety can never come into general favor in those districts where choicer kinds can be successfully cultivated. The Etrurian wheat, brought home by Com. Stewart, so far as yet appears, possesses all the most valuable qualities, and none of the defects of the Mediterranean. This is a bald variety, having a strong and vigorous stalk, a beautiful long smooth head, yielding a round, plump, white kernel, with a remarkably thin bran. It is very prolific, and quite as early as the Mediterranean, (Rev. D. Zollickoffer and others in the American Farmer,) and has thus far resisted the attack of the fly. We are gravely told by an anonymous writer, that "this wheat was not, as its name would indicate, brought from the little island of Etruria." In what creek this "little island" is situated, we have been unable to discover, but with such a decided negation, we are driven to the inference that the grain in question was derived from a territory which we *moderns* call Tuscany. The White Flint wheat, one of the choicest varieties of Western New York, withstands the attack of the fly better than any of the other kinds there in use. For a full account of it, see Gen. Harmon's paper in the Transactions of the New York State Agricultural Society, 1843, p. 217. In conclusion of this branch of our subject, we would observe, that we should by no means be solicitous of procuring any variety of wheat, *merely* because of its fly proof qualities, believing as we do, that in all ordinary visitations of the fly, other measures are a sufficient safeguard. If vigor of root, firmness of stalk, and rapidity of growth, are, as would appear, the points which render these varieties fly proof, a fertile soil will certainly go far towards imparting to most other varieties the same quality.

THE SOUTHERN PLANTER.

Mr. Josiah W. Ware writes us as follows: "Enclosed you will find one dollar which I understand is the subscription to your paper, so valuable to the farmer's interests. The Planter is so cheap, and of such vast value to the farmer's interest, that every farmer who cultivates even a garden ought to sustain it. It is, I believe, the only farming journal in this region of country; and surely the South ought to sustain an Editor who will with industry and energy collect all that is new and valuable from other agricultural journals, and who devotes himself to gathering and placing in a tangible readable form, the experience of the best farmers, so that they may be used by their own generation and then bound up and transmitted to posterity. For certainly this must be of more value to the planters of the South than all the political and partizan papers put together." At the risk of being charged with recommending ourselves, we have transcribed this passage from our friend's letter, *because we believe what he says is true.*

POTATO YEAST.

To two middling sized boiled potatoes, add a pint of boiling water, and two tablespoonfuls of brown sugar. One pint of hot water should be applied to every half pint of the compound. Hot water is better in warm weather. This yeast being made without flour will keep longer, and is said to be much better than any previously in use.

CONSTRUCTION OF CHIMNEYS.

In constructing chimneys, the builder should bear in mind that the facility for the passage of air through a funnel depends entirely upon his labor in its formation. The more direct the funnel, the more regular in its size, and the smoother its surface, the more perfect will be the draft. The greater length you add to a funnel by giving it abrupt turns or "breaks,")as they are sometimes called,)the less useful it is for the purpose for which it is designed. A funnel 8 inches square, made perfectly smooth and even in its inner surface, and perpendicular in its direction, will conduct a stronger draft than one twice the size which is irregular in its form, with a rough surface, and having abrupt turns. A separate funnel, for each room, should be carried all the way up the chimney; and if this is not done the area of each funnel should equal in measurement that of all the flues leading into it. A chimney in a conical form, with a gradual increase of area as it is carried up, will be much more regular in its draft at the apex than that of the ordinary construction, where the outlet of the funnel is smaller than the bottom or inlet. The most prominent difficulty in the draft of chimneys is occasioned by discrepancies in the formation of the funnel.—*Fisk's Fuel Almanac.*

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